

APPROVED
 Head of the Military Department
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TOPICS AND QUESTIONS for practical classes on Medicine of Extreme Situations for 3rd year students for the spring semester of 2023/2024 academic year

№	Dates	Topic and questions
1.	12/02-23/02	<p>1.2. National disaster response systems.</p> <ol style="list-style-type: none"> 1. Definition, objectives and structure of national disaster prevention and response systems. 2. Functions of state and non-state structures in the field of disaster prevention and response. 3. Chemically hazardous objects. Brief characteristics and classification of highly toxic substances. Medical and tactical characteristics of accidents at chemically hazardous facilities. 4. Radiation hazardous objects. The main damaging factors during radiation accidents. Principles of ensuring of radiation safety. Medical and tactical characteristics of accidents at radiation hazardous objects. <p>1.3. Medical evacuation and logistics.</p> <ol style="list-style-type: none"> 1. System of staged treatment of victims. Evacuation of the population. Organization of medical evacuation. 2. Sanitary losses. 3. Stage of medical evacuation: the schematic organization scheme, tasks of functional units. 4. Types of medical care, their volume, optimal time, forces and equipment. 5. Organization of emergency situations management abroad.
2.	26/02-8/03	<p>1.5. First aid for disaster victims.</p> <ol style="list-style-type: none"> 1. Providing first aid to victims of disasters. 2. Initial examination, in-depth examination of the victim, control and making decision for evacuation. 3. Clinical death, cardiopulmonary resuscitation. <p>2.3. Nerve agents.</p> <ol style="list-style-type: none"> 1. Neurotoxicity and neurotransmitters. Toxic substances with neuroparalytic and psychodysleptic effects. 2. Mechanisms of toxic action of organophosphates. 3. Clinical manifestations of acute intoxication, therapeutic tactics, use of antidotes. 4. Poisoning by lysergic acid diethylamide and BZ.
3.	11/03-22/03	<p>2.4. Cytotoxic agents.</p> <ol style="list-style-type: none"> 1. Classification of cytotoxic agents. Toxicological characteristics of mustard gas and lewisite. 2. Medical and tactical characteristics of zone of chemical contamination with lewisite and mustard gas. 3. Clinical characteristics of sulfur mustard damage to the skin, eyes, respiratory and digestive organs. Antidote treatment of poisoning with thiol poisons – arsenic compounds. 4. Toxicological characteristics of dioxins. <p>2.5. Pulmonary (choking) agents.</p> <ol style="list-style-type: none"> 1. Pulmonary agents (chlorine, phosgene, diphosgene): mechanism of toxic action, clinical picture of respiratory distress syndrome, emergency care at the prehospital stage. 2. Medical and tactical characteristics of zone of chemical contamination by pulmonary agents.
4.	25/03-5/04	<p>2.6. Irritant agents.</p> <ol style="list-style-type: none"> 1. Toxicological characteristics of lacrimators (chloroacetophenone, bromobenzyl cyanide) and sternites (adamsite, diphenylcyanarsine): mechanisms of toxic action, clinical manifestations and diagnosis of lesions, emergency care at the prehospital stage. 2. Medical and tactical characteristics of zone of chemical contamination with lacrimators and sternites. <p>2.7. Blood agents.</p> <ol style="list-style-type: none"> 1. Toxicological characteristics of hydrocyanic acid, cyanide and carbon monoxide. 2. Pathogenesis and clinical characteristics of different forms of lesions. 3. Clinical manifestations during poisoning by cyanogen chloride. 4. Antidote treatment during poisoning by hydrocyanic acid and carbon monoxide.

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5.	8/04-19/04	<p>2.8. Hazardous chemicals and technical liquids.</p> <p>1. Toxicological characteristics, mechanisms of toxic action, clinical manifestations of acute intoxication, emergency care at the prehospital stage in case of poisoning by substances commonly used in industry (ammonia, chlorine, trichlorethylene, hydrogen sulfide, hydrogen peroxide, carbon disulfide, acrylonitrile, sulfuric and hydrochloric acids, sulfur oxides, oxides nitrogen).</p> <p>2. Toxicological characteristics, mechanisms of toxic action, clinical manifestations of acute intoxication, emergency care at the prehospital stage in case of poisoning by technical liquids: methanol, ethylene glycol, dichloroethane, ethanol.</p> <p>3.1. Damaging factors of nuclear weapons.</p> <p>1. Nuclear weapons. Damaging factors of a nuclear explosion (penetrating radiation and radioactive contamination of the area, shock wave, light radiation, electromagnetic impulse), their damaging effect.</p> <p>2. Assessment of the radiation situation.</p>
6.	22/04-3/05	<p>3.2. Individual protection equipment.</p> <p>1. Personal respiratory protection equipment, classification, characteristics.</p> <p>2. Filtering and isolating gas masks, operational and physiological-hygienic characteristics. Determining the size of a gas mask, respirator. Hopcalite cartridge.</p> <p>3. Personal skin protective equipment, classification, characteristics. Military protective gear, operational and physiological-hygienic characteristics. Light protective suit (L-1).</p> <p>3.3. Collective protective equipment.</p> <p>1. Collective protective equipment: types and design.</p> <p>2. Sanitary and hygienic requirements for medical shelters.</p>
7.	6/05-17/05	<p>3.6. Assessment of the chemical situation.</p> <p>1. The purpose and objectives of assessment of the chemical situation.</p> <p>2. Zone of chemical contamination. Medical and tactical characteristics of the zone of chemical contamination. Initial data for assessing the chemical situation.</p> <p>3. Chemical intelligence: purpose, objectives, organization at the stages of medical evacuation. Methods for indication of poisonous and highly toxic substances.</p> <p>3.8. Collective protective equipment.</p> <p>1. Field equipment for artificial ventilation and oxygen therapy.</p> <p>2. Acute respiratory failure, types of hypoxia. Combitube, laryngeal mask, nasopharyngeal airway. Technique of conicotomy.</p> <p>3. Lung ventilators (Ambu-bag, TD-1, DP-9, DP-10, KI-4).</p>

THE LIST OF LITERATURE

BASIC

1. 3. Ciottone Disaster Medicine / [ed by] Gregory R. Ciottone. – 2nd ed. – [Pfiladelfia] : Elsevier, 2016. – xxxiii, 1013 p. : col.ill., scheme, tab.

ADDITIONAL

1. Koenig and Shultz's Disaster Medicine: Comprehensive Principles and Practices, Authors: Kristi L. Koenig, Karl A. Shultz, CUP, 738P.

2. United Nations International Strategy for Disaster Reduction (UNISDR). Global Platform for Disaster Risk Reduction, Second Session, Geneva, Switzerland, 16-19 June 2009
http://www.unisdr.org/files/11963_GP09Proceedings.pdf

3. World Bank (2005). Hazards of Nature, Risks to Development.
<http://www.worldbank.org/ieg/naturaldisasters/>

4. Pan American Health Organization (1999). Humanitarian Assistance in Disaster Situations: A Guide for Effective Aid <http://www.paho.org/english/ped/pedhuman.pdf>

5. Peppiat, D. (2006). ProVention Consortium, International Development Committee, Humanitarian Response to natural disasters. Seventh Report of Session 2005-06. House of Commons. HC 1188-II. Evidence 65-70.

6. World Health Organisation. Manual for the Public Health Management of Chemical Incident. 2009, available at http://whqlibdoc.who.int/publications/2009/9789241598149_eng.pdf

7. World Summit on Sustainable Development (WSSD 2002) <http://www.worldsummit2002.org/>.